

M-11628 US

CLAIM AMENDMENTS

The following is a complete listing of the pending claims:

1. (currently amended) A method of making a first-surface optical disk, comprising:
 - providing a father stamper, wherein the father stamper comprises spiral protrusions on a first surface corresponding to original laser cuts;
 - coating the first surface of the father stamper with nickel;
 - separating the nickel from the first surface to produce a second stamper having groove recesses on a first surface, wherein the groove recesses are mirror images of the spiral protrusions;
 - covering the first surface of the second stamper with a plastic material;
 - separating the plastic material from the second stamper, wherein the plastic material has lands corresponding to the groove recesses of the second stamper;
 - depositing a phase-change material directly over the lands, wherein the phase-change material is in a first state upon deposition and in a second state after being written to, and wherein the change from the first state to the second state changes the optical phase of the phase-change material in the positive direction; and
 - depositing a dielectric layer over the phase-change material to form the first-surface optical disk, the dielectric layer being deposited to have a thickness that enhances a contrast between the first and second states of the phase-change material, the first-surface optical disk consisting of no further layers.
2. (Original) The method of claim 1, wherein the covering comprises injecting the plastic material using an injection molding process.
3. (Original) The method of claim 1, wherein the phase-change material is an SbInSn alloy.

M-11628 US

4. (Original) The method of claim 1, wherein the providing comprises: providing a glass master disk with a first and a second principle surface; depositing a photoresist layer on the first principle surface of the disk; removing selected portions of the photoresist layer; depositing nickel over the photoresist layer; and separating the nickel from the photoresist layer to form the father stamper.
5. (Original) The method of claim 4, wherein the removing is by laser ablation.
6. (Original) The method of claim 4, wherein the removing comprises: exposing the selected portions of the photoresist layer; and etching the selected portions.
7. (Original) The method of claim 6, wherein the exposing is performed with a laser and results in the original laser cuts in the photoresist layer.
8. (Original) The method of claim 1, wherein data is written to the lands from exposure by a light source.
9. (Original) The method of claim 4, further comprising rotating the glass master disk and exposing the selected portions with a laser prior to the etching.
10. (Original) The method of claim 4, wherein the deposited photoresist layer is between approximately 20 nm and 120 nm.
11. (Original) The method of claim 4, wherein the deposited photoresist layer is between approximately 80 and 90 nm.
12. (Cancelled)

M-11628 US

13. (currently amended) The method of claim 142, wherein the dielectric layer comprises silicon oxynitride.

14. (Original) The method of claim 1, wherein the father stamper further comprises bump protrusions on the first surface of the father stamper corresponding to original laser cuts, the second stamper further comprises pit recesses on the first surface of the second stamper, and the separated plastic material further has bumps corresponding to the pit recesses of the second stamper, and the method further comprising depositing the phase-change material over the bumps.

15. (Original) The method of claim 1, wherein the second stamper is a mother stamper.

16. (Original) The method of claim 1, wherein the father stamper is a first generation stamper, and the second stamper is an even-numbered generation stamper.

17. (Original) The method of claim 1, wherein the second stamper has features that are opposite in polarity to features of the father stamper.

18. (Original) The method of claim 1, wherein the plastic material is a polycarbonate material.

19. (currently amended) A method of forming a first-surface optical disk, comprising:

providing a stamper, wherein the stamper has grooves corresponding to an original laser cut;

filling the grooves with a plastic material;

separating the plastic material from the stamper, wherein the plastic material has lands corresponding to the grooves;

M-11628 US

depositing a phase-change material directly over the lands, wherein the phase-change material has a positive optical phase shift at portions that are written to, wherein the shift is caused by a physical change in the material and a change in optical constants of the material, and

depositing a dielectric layer over the phase-change material to form the first-surface optical disk, the dielectric layer being deposited to have a thickness that enhances a contrast between an unwritten state and a written state of the phase-change material, the first-surface optical disk consisting of no further layers.

20. (Original) The method of claim 19, wherein the phase-change material comprises a SbInSn alloy.

21. (Original) The method of claim 19, wherein data is written on the lands.

22. (Original) The method of claim 21, wherein the data is read by tracking along the lands.

23. (Original) The method of claim 19, wherein the bumps are between approximately 80 nm and 90 nm in height.

24. (Original) The method of claim 19, wherein the stamper further comprises pits corresponding to the original laser cut, the method further comprising: filling the pits with the plastic material, wherein the plastic material also has bumps corresponding to the pits; and depositing the phase-change material over the bumps.

25. (Original) The method of claim 19, wherein the stamper is a mother stamper.

M-11628 US

26. (Original) The method of claim 19, wherein the plastic material is a polycarbonate material.

27. (Cancelled)

28. (Cancelled)

29. (Cancelled)

30. (Cancelled)

31. (Cancelled)